REMARKS

The present amendment is in response to the Office Action dated April 27, 2004, where the Examiner has rejected claims 1-10 and 12-43. By the present amendment, all claims 1-10 and 12-34 are canceled, and new claims 44-63 are added. Reconsideration and allowance of the pending claims in view of the following remarks regarding the claims is respectfully requested.

A. Objection to claims

Applicant cancels the objected to claims, and therefore, the Examiner's objections to claims 34-38 are no longer applicable.

B. Pending claims are not anticipated under 35 U.S.C. §102(e)

The Examiner cites the Kwon publication (USPN: 2003/0050087) as anticipating claims 1-10, 12-30 and 31 of the previously pending claims under 35 U.S.C. 102(e). In response, Applicant cancels all claims, and adds new claims 44-63, including independent claims 44, 56 and 61. Applicant asserts that the Kwon publication does not anticipate the devices/method of the independent claims. In addition and for completeness, Applicant further asserts that the Lofgren publication (USPN: 2003/0032843) does not anticipate the devices/method of the independent claims as discussed below.

To anticipate a claim under 35 U.S.C. sections 102(a), (b), or (e), the reference must teach every element of the claim. (See MPEP 2131.) "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (Emphasis added) (Verdegaal Bros. v. Union Oil Co. of California; see also MPEP 2131.) "The identical invention must be shown in as complete detail as is contained in the ... claim." (Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); see also MPEP 2131) Further any claim depending from base claims not anticipated or

made obvious by the prior art also are not anticipated or made obvious by the prior art since the dependent claims comprise all of the elements of the base claims.

The Kwon publication does not teach each and every element of independent claims 44 and 61. Specifically, in independent claims 44 and 61, Applicant claims, inter alia, devices comprising a serial memory interface controller and a serial interface controller, respectfully, connected to a non-volatile memory by a serial address and data line. In claim 56, Applicant claims a method for reading a non-volatile memory over a serial address and data line. (See Fig. 1- 5, and the accompanying description of the Figures of the present application.) Kwon neither teaches nor suggests a serial memory interface controller for serially reading from/writing to a non-volatile memory as claimed in the pending independent claims. Further, on page 9 of the Office Action, lines 3-5, the Examiner acknowledges that "Kwon does not teach that the controller.... is a serial interface controller". Thus, the Kwon publication does not anticipate the independent pending claims 44, 56 and 61, and the claims dependent thereupon.

The Lofgren publication does not teach each and every element of the pending claims. Among other things as discussed below, Lofgren does not teach or suggest a (wireless) communications circuit as claimed in independent claims 44, 56 and 61. Specifically, the wireless communications circuit is operated by the processing unit according to data read from a non-volatile memory and stored in a volatile memory. Thus, the Lofgren publication does not anticipate the independent pending claims 44, 56, and 61, and the claims dependent thereupon.

C. Pending claims are not obvious under 35 U.S.C. §103.

The Examiner rejects canceled claims 32-39, 41-42 and 43 under 35 U.S.C. §103(a) as being unpatentable over the Kwon publication in view of the Lofgren publication. Applicant asserts that the new independent claims 44, 56, and 61, and the claims dependent thereupon, are patentable over the cited art as discussed below. Accordingly, claims 44-63 should be allowed.

An invention is unpatentable under 35 U.S.C. §103(a) if the differences between it and the prior art would have been obvious at the time of the invention. As stated in MPEP § 2143, there are three requirements to establish a *prima facie* case of obviousness.

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck* 947 F.2d 488, 20 USPQ2d, 1438 (Fed. Cir. 1991).

1. The first prima facie requirement is not met by the Kwon and Lofgren references. With respect to the first *prima facie* requirement, there is no motivation or suggestion to combine the Kwon and Lofgren references in such a manner as to make the independent claims 44, 56 and 61 obvious. Specifically, Lofgren teaches an integrated-circuit memory system which is contemplated to replace a mass storage system such as a disk drive memory in a computer system. (See Lofgren, paragraph 0013, lines 4-7.) Lofgren discloses a microprocessor and a separate mass storage system which includes the controller module. (See Lofgren, Figures 1A and 1B.) Lofgren further states that "[s]erializing the command, address and data information for these devices is unconventional since it may require more circuitry than conventional parallel access." (See Lofgren, paragraph 0022, Lines 5-9.) Thus, Lofgren teaches away a space sensitive serial control interface circuit which resides within the processor. There is no motivation or suggestion in Kwon to include a serial interface in the Kwon apparatus, and likewise, there is no motivation or suggestion in Lofgren to

utilize the serial interface portion of his mass storage system in a wireless communication device. Thus, the first prima facie requirement is not met by the combination of the Kwon and Lofgren references.

      2. The second prima facie requirement is not met by the Kwon and Lofgren references. It has not been demonstrated that the modification of the cited reference points to the reasonable expectation of success in the present invention, which is the second requirement of the obviousness analysis. However, modifying Kwon with elements of Lofgren does not point to a reasonable expectation of success because the combination would have to be further modified to result in a system as contemplated by Applicant. However, the further modification required would rely on Applicant's own disclosure, or impermissible hindsight, to arrive at Applicant's invention. (See MPEP section 2145, paragraph X.)

      Referring to Figures 1B and 7B of the Lofgren reference, the controller module 133 of Lofgren would be inoperable if placed in a Kwon device since "some of the controller module's functions are performed by the system microprocessor 121 and other system resources of the computer system 101." (See Lofgren, paragraph 90.) Kwon does not teach or suggest that his NAND interface circuit must not rely on its functions being performed by the MPU or other system resources. Therefore, if the Lofgren mass storage system of Figures 1B and 7B is used to replace the Kwon memory circuit, the resulting combination would be inoperable unless the Kwon system is further modified to perform some of the controller module's functions, which further modifications are neither taught nor suggested by the Kwon and Lofgren references. Finally, the resulting further-modified combination would require yet a further modification of the addition of ROM to the processor to initiate transfer of data from the mass storage to the RAM as claimed by Applicant. This further modification is neither taught nor suggested by the Kwon and Lofgren references. Thus, without impermissible hindsight, that is, relying upon Applicant's disclosure, modification of Kwon in view of Lofgren does not result in the devices and method of claims 44, 56,

and 61. Since there is not a reasonable expectation of success in modification of the two references, the second requirement of the obviousness analysis has not been met.

3. The third prima facie requirement is not met by the Kwon and Lofgren references. With respect to the third requirement to support a *prima facie* case of obviousness, the two references do not teach all the limitations of the claims as discussed below.

a. Independent claim 44, and dependent claims 45-55. Independent claim 44 is not obvious in view of Kwon and Lofgren since these references fail to teach or suggest each and every element of independent claim 44. Specifically, claim 44 comprises, among other things,

> " a processing unit comprising:
> a serial memory interface controller; and
> a read-only memory comprising code for providing instructions for reading data from a non-volatile memory;".

Kwon does not teach or suggest a serial memory interface controller anywhere within his mobile phone. Lofgren teaches a serial memory controller, a processor, and a ROM which are all separate elements connected to each other via a parallel bus. In contrast, Applicant discloses and claims a processing unit having a ROM and serial memory interface controller integral to the processing unit. Since the references do not teach or suggest the device of claim 44, and there is no motivation or suggestion to combine the Kwon and Lofgren references in such a manner as to make the device of claim 44 obvious, and it can not be demonstrated that the modification of the cited references points to the reasonable expectation of success, then Applicant asserts that claims 44-55 are patentable over the cited prior art. Applicant respectfully requests that the Examiner issue a notice of allowance for claims 44-55.

b. Independent claim 56, and dependent claims 57-60. Independent claim 56 is not obvious in view of Kwon and Lofgren since these references fail to teach or suggest

each and every element of independent claim 56. Specifically, claim 56 comprises, among other things,

"executing instructions from a read-only memory in a processing unit, the instructions for directing a serial interface controller of the processing unit to read serial data from a non-volatile memory;
reading the serial data from the non-volatile memory over a serial address and data line ".

Kwon does not teach or suggest reading serial data from the non-volatile memory as claimed by Applicant. Lofgren does not teach or suggest executing instruction from a read-only memory in a processing unit to direct a serial interface to read non-volatile memory. Since the references do not teach or suggest the method of claim 56, and there is no motivation or suggestion to combine the Kwon and Lofgren references in such a manner as to make the method of claim 56 obvious, and it can not be demonstrated that the modification of the cited references points to the reasonable expectation of success, then Applicant asserts that claims 56-60 are patentable over the cited prior art. Applicant respectfully requests that the Examiner issue a notice of allowance for claims 56-60.

c. Independent claim 61, and dependent claims 62-63. Independent claim 61 is not obvious in view of Kwon and Lofgren since these references fail to teach or suggest each and every element of independent claim 61. Specifically, claim 61 comprises, among other things,

"a processor connected to the wireless communications circuit, the processor comprising:
a read only memory for storing read instructions, the read instructions for instructing a serial interface controller to read the serial non-volatile memory upon a boot up condition of the wireless communications device".

Kwon does not teach or suggest a serial interface controller for reading serial non-volatile memory as claimed by Applicant. Lofgren does not teach or suggest a

processor connected to a wireless communications circuit. Lofgren further does not teach a processor having an integral read only memory and serial interface controller. The references do not teach or suggest the device of claim 61, and there is no motivation or suggestion to combine the Kwon and Lofgren references in such a manner as to make the device of claim 61 obvious, and it can not be demonstrated that the modification of the cited references points to the reasonable expectation of success. Therefore, Applicant asserts that claims 61-63 are patentable over the cited prior art. Applicant respectfully requests that the Examiner issue a notice of allowance for claims 61-63.

D. Regarding Examiner's Comments

In response to Applicant's assertion that the Kwon publication does not teach or suggest the use of a serial interface, the Examiner states in his remarks that

> "First of all, Examiner would like to emphasize that as stated in the abstract and title, the invention of Kwon is related to the wireless communications device that uses a NAND-type flash memory, a type of non-volatile memory."

Applicant asserts that this statement does not affect whether Applicant's claims are patentable. That is, Kwon merely discloses a single element of a dependent claim of one embodiment of Applicant's invention. However, Kwon does not teach or suggest Applicant's configuration of a serial memory interface controller connected to non-volatile memory by a serial address and data line, which serial memory interface controller reads data from the non-volatile memory for storage in a volatile memory. The non-volatile memory may be various types of memory including, but not limited to serial memory. (See pages 7-8 of Applicant's disclosure.) Whether memory is serial or parallel does not depend on the type of data line connecting to the memory. As disclosed in Applicant's specification and as claimed, non-volatile memory (which may be serial or parallel) is connected via a serial address and data line to a serial memory interface controller.

The Examiner further states in the "Remarks" section on page 17 that

"However, it <u>seems like</u> the use of serial interface is referred to only clocked

serial memory and not the clocked parallel memory because the clocked parallel

memory <u>has to</u> use some type of parallel interface." (Emphasis Added.)

Applicant asserts that this statement by Examiner is unsupported by a reference.

Applicant claims a non-volatile memory, connected to a serial interface controller by a

serial address and data line, which non-volatile memory stores data for transfer to a

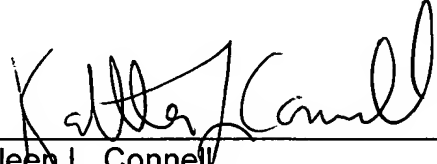volatile memory in the wireless communications device.

E. Conclusion

Applicant asserts that new claims 44-63 are neither anticipated under 35 U.S.C.

102(e) nor obvious under 35 U.S.C. 103(a) in view of the Kwon and Lofgren

publications as discussed above. Specifically, Kwon and Lofgren do not teach each

and every element of the independent claims. In addition, the disclosure of the Lofgren

publication fails to cure the basic deficiencies of the Kwon publication, and as such, the

combined references of Kwon and Lofgren cannot result in the device or methods

specified by the newly added claims 44-63. Thus, Applicant respectfully requests that

the Examiner issue a notice of allowance for all of the pending claims 44-63.
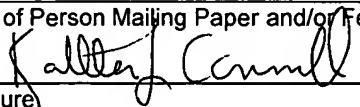
Should the Examiner believe that prosecution of this application might be expedited by further discussion of the issues, he is invited to telephone the attorney for Applicant at the telephone number listed below.

Respectfully submitted,

Dated: August 4, 2004   By: _____
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